

Patent claims:

1. A process for preparing isocyanoatoorganosilanes by thermolysis of carbamatoorganosilanes, wherein
5 the thermolysis takes place by exposure to microwave radiation.
2. The process as claimed in claim 1, wherein isocyanoatoorganosilanes of the general formula
10 (1) are prepared



where

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R is a monovalent C₁-C₁₀-alkyl radical,

R¹ is a divalent C₁-C₆-hydrocarbon radical and

20 **R**², **R**³ and **R**⁴ are in each case independently of one another, a methyl, ethyl, n-propyl, isopropyl, methoxy, ethoxy, n-propoxy or isopropoxy radical,

25 by thermolysis of carbamatoorganosilanes of the general formula (2)



3. The process as claimed in claim 1 or 2, wherein
30 the thermolysis takes place in the presence of a catalyst.
4. The process as claimed in claim 3, wherein the catalyst is in homogeneous form.
- 35 5. The process as claimed in claim 4, wherein as catalyst one or more compounds selected from the group consisting of soluble compounds of tin,

- 5 lead, cadmium, antimony, bismuth, titanium,
 zirconium, niobium, iron, cobalt, manganese,
 chromium, molybdenum, tungsten, nickel, copper and
 zinc, and soluble organic nitrogen bases, are
 used.
6. The process as claimed in claim 4 or 5, wherein as
 catalyst one or more compounds selected from the
10 group consisting of 1,4-diazabicyclo[2.2.2]octane,
 dibutyltin dilaurate, dibutyltin maleate,
 dibutyltin diacetate and dimethyltin dichloride
 are used.
7. The process as claimed in claim 3, wherein the
15 catalyst is in heterogeneous form.
8. The process as claimed in claim 7, wherein as
 catalyst metals and/or compounds comprising
 elements selected from the group Sn(I), Sn(II),
20 Pb(II), Zn(II), Cu(I), Cu(II), Co(I), Co(II), Na,
 K, Li, Rb, Cs, Sr, Ba, Mg, Ca, Cr, Mo, Ti, V, W,
 Ce, Fe, Ni, Si, Al, Ge, Ga, In, Sc, Y, La and
 lanthanides, Pd, Pt, Co, Rh, Cu, Ag, Au, Zn, Cr,
 Mo, W, Cd, Fe, N, O, B, C, or mixtures and alloys
25 comprising the abovementioned elements are used.
9. The process as claimed in claim 7 or 8, wherein as
 catalyst oxides, hydroxides, oxyhydroxides, mixed
 oxides, acetates, formates, oxalates, tartrates,
30 citricates, nitrates, carbonates, or mixtures of the
 abovementioned compounds of one or more elements
 selected from the group consisting of Sn(I),
 Sn(II), Pb(II), Zn(II), Cu(I), Cu(II), Co(I),
 Co(II), Na, K, Li, Rb, Cs, Sr, Ba, Mg, Ca, Cr, Mo,
35 Ti, V, W, Ce, Fe, Ni, Si, Al, Ge, Ga, In, Sc, Y,
 La and lanthanides, Pd, Pt, Rh, Ag, Au and Cd are
 used.

10. The process as claimed in claim 7 to 9, wherein as catalyst one or more compounds selected from the group consisting of TiO_2 , ZrO_2 , HfO_2 , Al_2O_3 , BaO , CaO , MgO , CeO_2 , La_2O_3 , Y_2O_3 , Sm_2O_3 , Yb_2O_3 , Cr_2O_3 , ZnO , V_2O_4 , MnO_2 , NiO , In_2O_3 , Ga_2O_3 , GeO_2 , FeO , Fe_2O_3 , Fe_3O_4 , CuO , Co_3O_4 , $\text{Fe}(\text{MoO}_4)_3$, MgO/CsOH , MgO/NaOH , aluminosilicates, zeolites, cordierite of the composition $2 \text{ MgO} \cdot 2 \text{ Al}_2\text{O}_3 \cdot 5 \text{ SiO}_2$, heteropolyacids, carbon, transition metal nitrides, transition metal borides, transition metal silicides and carbides are used.
11. The process as claimed in claim 7 to 10, wherein the catalysts are applied to a support.
12. The process as claimed in claim 7 to 11, wherein as catalyst supports inert refractory materials are used.
13. The process as claimed in claim 7 to 12, wherein as catalyst supports oxidic and nonoxidic ceramics, SiO_2 , carbon, aluminosilicates, magnesium aluminosilicates or resistant metallic materials are used.
14. The process as claimed in claim 7 to 13, wherein the catalyst supports are used in the form of irregular granules, spheres, rings, half-rings, saddles, cylinders, trilobes or monoliths.
15. The process as claimed in one or more of claims 1 to 14, wherein a gas-phase reactor containing a heterogeneous catalyst is inserted downstream of the microwave reaction chamber.